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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/535,418

02/13/2006

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EXAMINER

YEE, DEBORAH

ART UNIT

PAPER NUMBER

1793

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/535,418	Applicant(s) JEAN BEGUINOT ET AL.	
	Examiner Deborah Yee	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/19/05</u> . | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 10 to 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 10-324952 (JP'952).

3. The English abstract of JP'952 discloses steel alloy with constituents whose wt% ranges overlap those recited by the claims; such overlap renders Applicants' composition prima face obvious since it would be obvious for one skilled in the art to select the claimed alloy wt% ranges over the broader disclosure of the prior art since the prior art teaches similar utility (machine structural work piece) and similar properties of high hardness, high toughness, and machinability.

4. In addition, paragraph [0051] in the computer-generated English translation of JP'952 teaches a microstructure of not less than 80% martensite with a balance that can be bainite and retained austenite, and paragraph [0027] teaches the formation of carbides within the microstructure. Hence prior art microstructure would suggest Applicants' claimed microstructure comprising martensite or martensite-bainite with 5 to 20% retained austenite and carbides.

5. More specifically, example 20 of JP'952 in table 2 meets the claimed composition and when calculated, satisfies the claimed relationships. Note when calculated, C-Ti/4-

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$Zr/8 + 7 \times N/8 = 0.1576$ (within 0.1 to 0.55); $Ti + Zr/2 - 7 \times N/2 = 0.8095$ (> 0.05) and $1.05 \times Mn + 0.54 \times Ni + 0.50 \times Cr + 0.3 \times (Mo + W/2)^{1/2} = 2.5738$ (> 1.8).

6. In addition prior art example 20 meets or closely meets the limitations recited one or more of the other dependent claims.

7. Paragraph [0059] in English translation teaches hot working steel to a diameter (equivalent to thickness) of 20 mm and 60 mm that are within the thickness range of 2 mm to 150 mm recited by claim 17.

8. Even though prior art does not teach surface evenness characterized by a deflection of less than 12 mm/m or hardness ranging from 280 HB to 650 as recited by one or more of the dependent claims, such would be expected since compositional limitations are closely met and in absence of proof to the contrary.

9. A copy of Japanese patent 10-324952 and its computer-generated English translation has been provided in related case 10/535,176. Hence no new copies are been provided in this case.

10. The unapplied references have been cited to further depict the state of the art in related steel alloys. Inventive claims are deemed patentable over unapplied references.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1 to 9 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. Regarding claim 1, the phrase "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). Note "for example" occurs twice, once at preamble and once at the "rolling heat" step. Also process steps need to be actively recited, e.g. instead of "cooled", it should ---cooling---.

14. Claims 2 to 9 are dependent on claim 1 and are rejected for the same reasons as stated for claim 1.

15. Claim 16 is indefinite because "C*" is not defined.

Allowable Subject Matter

16. Claim 1 to 9 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

17. The following is a statement of reasons for the indication of allowable subject matter: The art of record does not teach or fairly suggest the method for producing a work piece or plate of steel alloy having a composition and equations, as recited by claims 1 to 9, comprising the steps of heating plate or work piece to elevated temperature by hot forming in the hot state or after austenitization by reheating in a furnace followed with cooling at a mean cooling rate greater than 0.5C/s between a temperature greater than A_{c3} and a temperature of from approximately $T = 800 - 270 \times C^* - 90 \times \text{Mn} - 37 \times \text{Ni} - 70 \times \text{Cr} - 83 \times (\text{Mo} + \text{W}/2)$ with $C^* = C - \text{Ti}/4 - \text{Zr}/8 + 7 \times \text{N}/8$, to $T - 50\text{C}$, the work piece or plate is then subjected to cooling at a mean core cooling rate $V_r < 1150 \times e_p^{-1.7}$ greater than 0.1C/s between the temperature T and 100C , e_p being the thickness

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of the plate expressed in mm, the work piece or plate is then subjected to further cooling as far as ambient temperature and optional planishing .

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/
Primary Examiner
Art Unit 1793

/DY/